SUPMAINE SIGNAL BANDONETIES

Visual Echo Sounding



The Submarine Signal Fathometer for Visual Echo Soundings



Submarine Signal Company

160 State Street :: Boston, Massachusetts

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Submarine Signal Company

Executive Offices
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Factory
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SAN FRANCISCO, 32 Howard Street

SEATTLE, 1257 Westlake Avenue North

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LE MATERIEL ELECTRIQUE S-W, Paris, France

Societa Officine Galileo, Florence Greece, Italy, Roumania

SUBMARINE SIGNAL COMPANY, Boston
United States, Gulf of Mexico, Great Lakes, Pacific Coast of Canada,
Signal Gesellschaft, Kiel

STEMARINE SIGNAL COMPANY, London Great Britain and Colonies (excluding Canada), Belgium

WALTER & COMPANY, Rio de Janeiro, Brazil

C. V. LANE, San Francisco, California

W. J. Moloney, Seattle, Washington

1901



1930

Submarine Signal Company

MODERN AIDS TO NAVIGATION

FATHOMETERS
for Visual Echo Sounding

OSCILLATORS
for Submarine Signaling

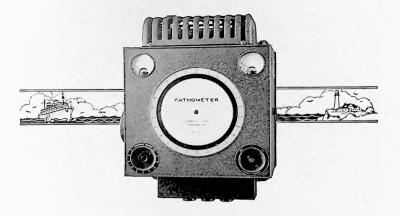
SYNCHRONUS SIGNAL EQUIPMENT for Distance Finding

SUBMARINE RECEIVERS for Direction Finding

ELECTRIC OSCILLATORS
for Air Signaling



The Pathometer for Visual Echo Sounding
Black arrows indicate electrical impulses
White rings and white arrows indicate sound waves



THE FATHOMETER

THE Fathometer is the result of many years of intensive research on the part of the Submarine Signal Company to produce navigating equipment to modernize existing methods of obtaining depth measurements. The Fathometer has revolutionized methods of "sounding" and is the greatest contribution to the increased safety of navigation which has been presented to the maritime world during the past quarter of a century.

The vital importance of an efficient sounding device and the necessity for its use when "on soundings" can hardly be exaggerated. There are many times when the safety of the ship and the lives of those on board depend to a great extent upon the accurate and rapid determination of the depth of water beneath the keel. Reference need only be made to the facts in almost every case of stranding on record to substantiate this statement.

Not until the Fathometer was presented to the maritime world was it possible to obtain automatically a series of instantaneous soundings visually indicated to the Navigator.

In May, 1914, on the United States Revenue Cutter MIAMI, during International Ice Patrol off the Grand Banks, Professor R. A. Fessenden, of the Submarine Signal Company, conducted experiments, the results of which proved the practicability of the principles which



have been embodied in the Fathometer. Professor Fessenden definitely established that powerful sounds produced underwater would create echoes from icebergs as well as the ocean bottom and the time of travel of these sounds could be accurately measured and thereby the distance of travel determined.

The early development work on the Fathometer resulted in the installation initially of this depth sounding equipment upon the LYDONIA of the United States Coast and Geodetic Survey. The accuracy and reliability of the Fathometer were proved and it was accepted by this branch of the Government Service as standard equipment for its survey vessels.

In November, 1929, Professor Fessenden was awarded the Scientific American Gold Medal by the American Museum of Safety for his various inventions for promoting safety at sea. The Fathometer, which was included among the inventions for which this medal was awarded, was considered by a distinguished committee of experts as being the outstanding achievement in the field of marine safety.

The International Conference on Safety of Life at Sea held in London in 1929 recommended that all maritime nations should encourage the use of echo depth sounding apparatus. This consideration by representatives of many governments forcefully indicates the great importance attached to echo sounding as embodied in the Fathometer for increasing safety at sea.

The universal need of a more efficient method of obtaining depth measurements has become more evident with the production of modern types of ships. The safety of vessels of greater size and speed requires at times continuous, rapid and accurate determinations of the depth of water beneath the ship.

The evidence of the need for improvement in the means for increasing the safety of navigation to prevent strandings is shown in the records of marine casualties. Lloyd's Register of Shipping reports during 1926 that 146 ships of approximately 234,000 gross tons, conservatively estimated at a value of \$25,000,000 exclusive of cargoes, were total losses due to stranding. The United States Shipping Board Bureau of Research reports that 1799 vessels



MANY SOUNDINGS PACIF MINUTE



MANY MINUTES FOR EACH SOUNDING

of over 500 tons each were partial losses due to stranding during the year ending May, 1927, and 621 out of a total of 1926 recorded disasters were due to groundings during the year ending June, 1928. We believe that the majority of these strandings was due to a lack of knowledge of exact position on account of fog or storm.

Statistics compiled by the Liverpool Underwriters Association covering casualties to vessels of 500 gross tons and upward are as follows:

Strandings		
1927	1928	1929
1805	1663	1813

ADAPTABILITY AND ADVANTAGES

Soundings as an Aid to Navigation

THE Submarine Signal Fathometer has increased immeasurably the value to the Navigator of soundings as used for the navigation of a ship. It eliminates the labor and inaccuracy of previous sounding methods and supplies depth measurements directly and instantly to the Navigator without either slowing down the vessel or dependence upon the additional assistance required for the operation of other types of sounding gear.

Modern ship design presents greater difficulties for the operation of the usual types of sounding apparatus requiring heavy sinkers. Sounding Machines are usually placed aft and in their use present the hazard of losing or breaking sounding apparatus from the fouling of the line with the propellers or hull when soundings are required in rough weather. The hazards of stranding increase with the increase of a vessel's speed, and more frequent and rapid soundings are required in order that a high degree of navigating efficiency may be maintained.

The Fathometer has conclusively shown its ability to conform to the demands for a highly efficient sounding equipment for all classes of vessels.

The Fathometer is recognized as standard navigating equipment for a modern vessel and is being included in the specifications of practically all of the vessels now building and planned for our rapidly expanding merchant marine.

Safety at Sea demands modern aids to navigation.

Advantages inherent in the Fathometer are:-

- Depth Measurements beneath the keel of a ship are observed visually by the Navigator. No estimating or figuring is required.
- Indications shown on the dial are instantaneous and accurate, regardless of the vessel's speed.
- The operation is entirely automatic after starting. Human errors are eliminated.
- 4. Echo sounding is accomplished so readily that it induces more constant checking of depth and therefore of position.
- Labor and time incident to taking "lead soundings" are eliminated, thereby increasing operating efficiency.
- 6. By giving a constant knowledge of depth, position is continually known.
- The apparatus is a part of the ship and is not dependent upon signals from other vessels or stations.
- 8. Insures a vessel against stranding as far as it is humanly possible.
- The operation of the Fathometer is not affected by winds, tides or currents
 and is available for instant use at any time. Regardless of what type of
 Compass is used to steer the ship's course, the vessel may be set off its
 course by currents or winds.
- 10. The Fathometer is accepted by Navigators as not only of first importance as an aid to navigation but also as a check on the accuracy of other aids to navigation.

PRINCIPLES OF OPERATION

THE importance and value of soundings as an aid to navigation appears in the 1930 issue of the United States Coast Pilot for the Atlantic Coast, Section C, Page 279, as follows:

"Soundings-

In thick weather, when near or approaching the land or danger, soundings should be taken continuously and at regular intervals * * * *, systematically recorded. By marking the soundings on tracing paper, according to the scale of the chart, along a line representing the track of the ship and then moving the paper over the chart parallel with the course until the observed soundings agree with those of the chart, the ship's position will in general be quite well determined. Echo sounding instruments, the use of which is increasing rapidly, provide the mariner with a most valuable aid to navigation."

Along rocky shores the timing of reflected sounds or echoes of a ship's fog horn have served to establish in times of fog definite means for determining the distance of the ship from the coast. Water is, however, a far better medium for transmitting sounds than is air.

The Fathometer incorporates the principle of translating the time of passage of a sound underwater and, therefore, the distance which it travels when echoed from the ocean's bottom to the ship's keel. The rate of travel of sound through water is, for all practical purposes, constant and the timing of its passage is a definite measure of the length of its path.

The Fathometer Indicator, which is usually located in the chart room of a vessel, controls the sending of a sound from an electric Oscillator which is fitted in a suitable position inside the ship near the keel. This sound travels from the bottom of the vessel, strikes the ocean floor and is reflected upward where it is received by a Hydrophone also fitted inside the vessel at a certain distance from the Oscillator. This sound "echo" creates an electrical pulsation which, at the instant that it is received, is automatically translated into a visual indication of depth on the Fathometer dial.

The navigator turns the switch on the Fathometer Indicator and depth is promptly indicated on the dial. As long as the equipment is left in operation, it will indicate the depth continuously at the rate of more than twenty soundings a minute. This is in marked contrast to the many minutes required to obtain a single sounding with former methods of obtaining depth measurements.

The Fathometer equipment consists essentially of three distinct units: The Indicator with its accompanying Amplifier, the Oscillator (sound producer) and the Hydrophone (sound receiver).

Fathometer Indicator

The Fathometer Indicator Unit controls the operation of the Oscillator which produces the sound waves. It receives the electrical impulses produced by the impact of the returning echoes on the Hydrophone. It then translates the time interval between the emission of the sound and the reception of the echo into a visual indication of depth which appears in the form of a flash of a pencil of light on the Fathometer dial opposite the number corresponding to the depth at each instant.

Amplifier

The Amplifier which accompanies the Indicator transforms the sound echoes as received from the Hydrophone into electrical impulses of sufficient strength to cause a flash of red light at the proper place on the Fathometer dial to indicate the depth beneath the vessel's keel.

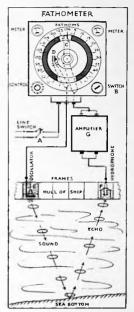
Oscillator

The Oscillator, or sound producer, delivers sounds of great intensity for a small fraction of a second when actuated by the Indicator. The sounds which are produced are of sufficient strength to pass from the ship's hull to the ocean bottom and to return to actuate the Hydrophone.

Hydrophone

The Hydrophone, or sound receiver, picks up the returning sound echoes and transmits them as electrical pulsations to the Amplifier and thence to the Indicator. Both the Oscillator and Hydrophone are usually placed in water-filled tanks located inside the vessel's hull.

OPERATION OF THE FATHOMETER



THE Fathometer Indicator, shown in this diagram, consists essentially of a disc mounted on the end of a shaft and driven by a small constant speed motor equipped with a governor. The motor is started by closing the Line Switch "A" and turning the Fathometer Switch "B". Mounted behind a radial slot in the disc is a Neon tube "C". In front of the disc is a circular scale which is graduated from 2 to 130 fathoms and lies just outside the path of the slot in front of the Neon tube.

Sound Production

A cam on the revolving shaft opens an electrical contact "D", thus allowing the Oscillator "E" to operate at the moment that the Neon tube is at the top of the scale. The Oscillator "E" produces a sound of short duration.

Sound Reception

The sound "echo" returning from the sea bottom is "picked up" by the Hydrophone "F" and a voltage is generated in the Hydrophone circuit. This voltage is

transmitted through the Amplifier "G" causing a flash of light in the Neon tube "C" which, by this time, has traveled part way around the Fathometer dial. Acting like a luminous pointer, the flash of light indicates the depth at that instant. The disc to which the Neon tube is mounted makes several revolutions per minute and light flashes of the Neon tube, indicating depth, follow each other in rapid succession. If the bottom is level, the flashes will appear at the same point on the dial, but where the bottom is irregular it follows that they will vary in location in accordance with the contour of the bottom.

Starting and Stopping Apparatus

The Fathometer Installation is started and stopped by a switch button. The adjustments for the taking of soundings are quite similar to those required by a radio receiver. Once the speed of the motor is regulated, the operation is entirely automatic, depth indications on the clock-like dial being given continuously so long as the Fathometer is in operation.

INSTALLATION

THE complete installation of the Fathometer Indicator and Amplifier, Oscillator and Hydrophone may be made without either placing the vessel in drydock or cutting holes in the hull of the vessel to install the sound producing and receiving equipment. The successful operation of the installation depends upon the correct location of each unit comprising it.

A survey of the vessel as well as of the drawings showing the longitudinal and the transverse sections of the ship will allow the engineers of the Submarine Signal Company to prepare complete installation specifications covering the exact location in the ship of all essential units.

The Fathometer and its accompanying Amplifier, which includes batteries to supply current for the Hydrophone Receivers, are usually located in the Chart Room or Pilot House of the ship.

The Oscillator is mounted in the bottom of the ship, and is usually

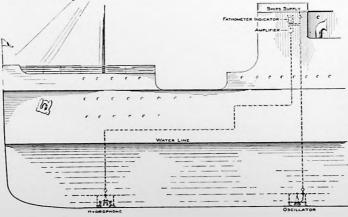
suspended in a water-filled tank.

The Hydrophone Receiving apparatus is suspended in a tank which is held securely against the inside wall of the ship as shown in the working drawings which are supplied for each installation and at a point designated by the Submarine Signal Company.

The correct sizes and arrangements of cable, junction boxes and

switches are covered by detailed drawings and specifications.

The Fathometer equipment includes no delicate instruments requiring expert adjustment and maintenance; it is placed in operation by the turn of a switch and shows depths instantly and accurately without slowing down the ship. It has proved itself accurate, reliable and seaworthy.



Page twelve !...

COMMENTS

THE intrinsic worth of the Fathometer as a modern aid to navigation appears in the following comments which have been received by the Submarine Signal Company from many of those who have used and depended upon this sounding equipment.



S.S. SURVEYOR
UNITED STATES COAST AND GEODETIC SURVEY

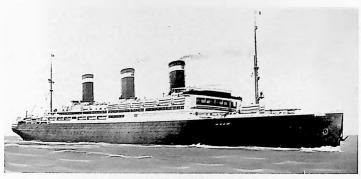
In 1924 the first installation of a Submarine Signal Fathometer was made on the S.S. LYDONIA of the U. S. Coast and Geodetic Survey. The accuracy and reliability of this echo depth sounding equipment was established beyond question. The Fathometer was accepted and has since been installed in all of the largest vessels of the Coast and Geodetic Survey as well as upon other survey ships of this and other countries.

One of the most significant statements concerning the value of the Fathometer to navigation was made by Captain W. E. Parker of the U. S. Coast and Geodetic Survey:

"A merchant ship equipped with this apparatus should he able to make port during thick weather or avoid dangerous shoats, by soundings alone. Given an adequate chart, the Master should be able to spot his position at any time by a comparison of a set of echo soundings with the charted depths and lay his course with at least as much confidence as from astronomic sights."

Mr. E. Lester Jones, late Director of the U. S. Coast and Geodetic Survey stated as follows:

"I wish to congratulate your Company on the important contribution to navigation which you have made in the Fathometer. If you care to do so you may refer anyone interested in this subject to this Bureau."



SS LEVIATHAN UNITED STATES LINES, INC.

Comment of Mr. William Perrot, Operating Manager of the United States Lines (1928):

"I regard the Fathometer as one of the greatest improvements in the science of navigation in recent years. It is proving itself to be invaluable to navigation on the 'Leviathan.' I have recommended to the American Committee of the International Conference on Safety at Sea, which meets in London next year (1929), that its adoption should be indorsed as standard equipment on every passenger vessel."

At this time Commodore H. A. Cunningham of the S.S. LEVIATHAN wrote (1928) as follows:

"The Fathometer installed on this ship by the Submarine Signal Corporation has been in use on the past two voyages and its operation has proved to be

very successful and gratifying.

"It has been given a strennous test since the installation and it has far exceeded our highest expectations; not only do I approve of it for this ship but I am of the opinion that it should be installed on all the ships of the U.S. Lines. So far as its usefulness in the matter of safety, it stands in a class by itself for there is nothing with which to compare it at the present time; it has brought the Mariner's dream of Paradise one step nearer.

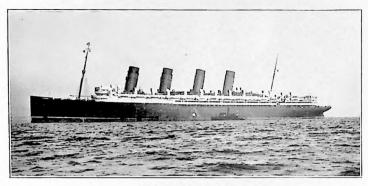
The following letter (of May 1, 1930) received recently from Commodore Cunningham gives the most recent report of the LEVIATHAN'S Fathometer.

"It gives me pleasure to send you my comments regarding our experience

with the Fathometer on the 'Leviathan'.

"We have had our installation nearly two years and to date we have had no repairs or upkeep charges. It has given satisfaction always and has proved a most valuable aid approaching a coast in foggy weather. The Fathometer tends to eliminate delays for it gives the Master sufficient assurance to proceed during inclement weather conditions.

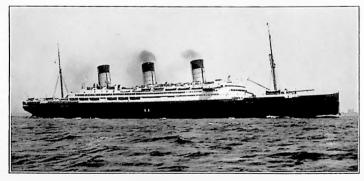
"I can heartily recommend it as one of the most important aids to navigation developed during recent years and I believe it should be standard equipment for every modern vessel."



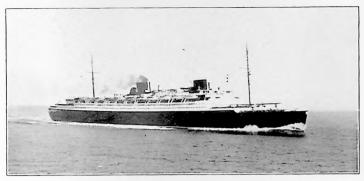
S.S. MAURETANIA
THE CUNARD STEAMSHIP COMPANY, LTD.

The Cunard Steamship Company has equipped its three largest and fastest transatlantic passenger vessels, the MAURETANIA, AQUITANIA and BERENGARIA, with the Fathometer.

At a recent meeting (May 6, 1930) of the Master Mariners' Club in Southampton the Southern Daily Echo reports that Capt. J. A. Wolfe, R.D., R.N.R., said that "the Cunard Line had had experience with echo sounding machines and he could say that their commanders 'swore' by them."



S.S. BERENGARIA
THE CUNARD STEAMSHIP COMPANY, LTD.



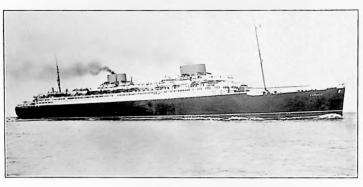
S.S. BREMEN NORTH GERMAN LLOYD

The first transatlantic liner to install the Fathometer for Visual Echo Sounding was the S.S. COLUMBUS of the North German Lloyd.

Shortly after the installation of the Fathometer was made upon the S.S. COLUMBUS, Mr. H. Schuengel, General Manager of the North German Lloyd in the United States, made the following statement:

"The North German Lloyd has adopted the Fathometer in the first place because it is a practical device contributing materially to safe navigation, and secondly because the North German Lloyd intends to be the first to make use of modern scientific achievements as applied to ocean transportation."

The experience gained by this company with the Fathometer upon the S.S. COLUMBUS resulted in its adoption on the S.S. BERLIN and subsequently it was included in the specifications of its two super-liners, the S.S. BREMEN and S.S. EUROPA.

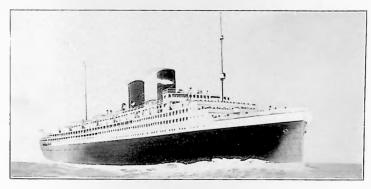


S.S. EUROPA NORTH GERMAN LLOYD

Captain N. Johnsen of the S.S. EUROPA was formerly the Master of the S.S. COLUMBUS. He said that the Fathometer proved invaluable to him in supplying constant information in approaching port at night or in a fog. He stated further:

"The Fathometer has solved the problem of depth sounding in a way that has been needed for centuries, and by giving a constant knowledge of depth has made it possible also to know our position."

Navigating officials have on the bridge the usual charts showing the depths of the ocean. On these charts have been drawn lines indicating the best approaches to New York on westbound voyages and to Bishop's rock on eastward trips. The Fathometer is set in operation on nearing shore and enables the master to pick up promptly his position and course, after which it is merely a matter of following the line into port.



S.S. SHAWNEE

CLYDE-MALLORY LINES

ATLANTIC, GULF AND WEST INDIES STEAMSHIP LINES

CLYDE STEAMSHIP COMPANY MALLORY STEAMSHIP COMPANY

GENERAL OFFICES, PIER 36 NORTH RIVER

NEW YORK

WILLIAM PARK

S.S. "Shawnee" New York, N. Y. April 23, 1930

Submarine Signal Corporation, 160 State Street, Boston, Mass.

Gentlemen:

Your Fathometer has been in use on board the S. S. "Shawnee" for about two years. With the exception of the Compass, I consider it the most useful aid in navigating a ship. We can get IS or more soundings per minute, and I have perfect confidence in them.

Yours truly,

B. W. Dewrsey



S.S. IROQUOIS CLYDE-MALLORY LINES

ATLANTIC, GULF AND WEST INDIES STUAMSHIP LINES

CLYDE STEAMSHIP COMPANY MALLORY STEAMSHIP COMPANY

GENERAL OFFICES, PIER 36 NORTH RIVER

NEW YORK

WILLIAM PARK

S.S. IROQUOIS New York, N.Y.

March 31, 1930.

Submarine Signal Company, 160 State Street, Boston, Mass.

Gentlemen:

Your Fathometer has been installed on the IROOUDIS for the past six months and has been given a very thorough test. I have found it very accurate, dependable and I have full confidence in it.

I regard it as one of the best aids to navigation developed in recent years and it also serves as an accurate check on other aids to navigation.

Giving as it does a constant knowledge of the depth, it enables the Navigator to proceed with added confidence during thick and foggy weather.

Yours very truly, ES Curry MASTER, S.S. IROQUOIS



S.S. MORRO CASTLE

WARD LINE

NEW YORK AND CUBA MAIL STEAMSHIP COMPANY

The Atlantic, Gulf and West Indies Steamship Lines have installed the Fathometer not only upon their latest ships of the Clyde-Mallory Lines but also upon ships of the Ward Line.

NEW YORKAND CUBA MAIL STEAMSHIP COMPANY

WARD LINE

FOOT OF WALL STREET

NEW YORK FILE No. April 24th, 1930.

Submarine Signal Company, 160 State Street, Boston, Mass.

Gentlemen:

Our constant thought has been to make those ships the safest afloat. We have incorporated every proven safeguard and consider the Fathometer essential in practically eliminating the strending hazard so important in a fast vessel.

Sincerely yours.

E. E. =illmott Inspector Of Construction.



S.S. CALAMARES
FLAGSHIP OF THE "GREAT WHITE FLEET" OF THE
UNITED FRUIT COMPANY

One of the most significant facts as to the value of the Fathometer is indicated by its use by such representative ship operators as those which are referred to in this booklet.

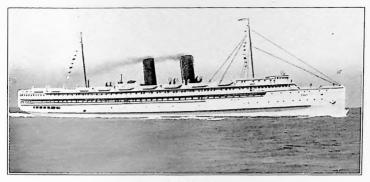
On May 1, 1929, the United Fruit Company had three vessels equipped with the Fathometer. On January 1, 1930, this Company ordered five additional ships to be equipped with Fathometers.

President Victor M. Cutter of the United Fruit Company made the following statement in his Annual Report for 1929:

"All ships are being fitted with electrical depth sounding."

This means that the Fathometer has been accepted for the "Great White Fleet" and each year a definite number of vessels now being operated will be equipped with Fathometers. New vessels to be built are to have Fathometers installed.

Officials of the United Fruit Company who handle the marine equipment of the ships of the "Great White Fleet" consider that visual echo depth finding, as embodied in the Fathometer, is of paramount importance to safe navigation.



S.S. YALE
SISTER SHIP OF THE S.S. HARVARD
LOS ANGELIS STEAMSHIP COMPANY

From PACIFIC MARINE REVIEW

April, 1930.

"Captain Frank Johnson of the liner Yale and Captain Louis Hillsinger of the Harvard, operated by the Los Angeles Steamship Company, report that the installation of the Fathometer, a visual echo sounding device, is one of the greatest contributions to the art of navigation developed during the last decade. Both liners were recently equipped with Fathometers. With this instrument installed the master of a liner is able to tell at a glance just how much water there is beneath his ship. The indications of the depth of water beneath a vessel's keel are instantaneous and accurate regardless of the ship's speed; the operation is entirely automatic after starting, thus climinating the human equation with its possibility of error. The echo sounding method is accomplished so readily that it induces more constant checking of depth and therefore of position.

"The apparatus is a part of the ship and not dependent upon signals from other vessels or stations. So far as humanly possible the device is said to remove any probability of a vessel's stranding."



S.S. YARMOUTH
EASTERN STEAMSHIP LINES, INC.

Comment of Mr. A. B. Sides, Vice-President, Boston & Yarmouth Steamship Co., Ltd.:

"I have no hesitancy in saying that the Fathometer by giving instantaneous, visual soundings in a most convenient manner, increases the safety and economy of the ship operation to a marked degree."

EASTERN STEAMSHIP LINES, INC.

BOSTON-NEW YORK LINE NEW YORK-PORTLAND LINE LINES EAST OF BOSTON BOSTON & YARMOUTH S.S. CO.LTD.



OLD DOMESON LINE NEW YORK TARROUTE LINE NEW YORK TARROUTE LINE

PIER IS NORTH RIVER NEW YORK

S.S.Yarmouth. Boston, Mass., Bov. S, 1929.

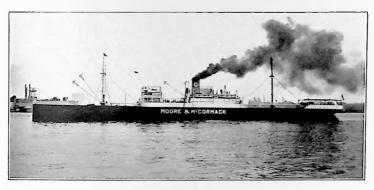
Submarine Signal Corporation. #160 State Street, Boston, Mass.

Gentlemen;

any its value to a ship cannot be estimated. Its lightning like action in recording, with a most dependable accuracy, the depth of water through which the ship is passing, marks it as possibly the greatest invention yet made in Marine Science. I feel that in the Coastules Trade, as is the ship of which F as Master, in and out of port four to six times weekly, almost regardless of weather conditions the Fathomater is almost undispensable to a Master Mariner and the sefety of his ship in making land.

If K Gunly

Master, 9.3.Yarmouth,



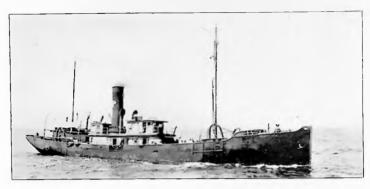
S.S. CHICKASAW

Moore & McCormack Company

On April 29, 1929, the S.S. CITY OF FAIRBURY of the Moore & McCormack Company was equipped with the Fathometer.

This equipment was operated most successfully for several months, to the complete satisfaction of Captain J. O'Brien of the S.S. CITY OF FAIRBURY. He stated that the Fathometer was the "finest instrument that he had ever used."

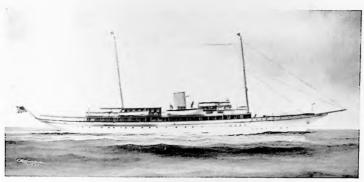
The results obtained with the Fathometer on the S.S. CITY OF FAIR-BURY caused the Officials of the Moore & McCormack Company on December 9, 1929, to order nine additional Fathometer installations made upon the ships of their fleet.



TRAWLER PRINCETON WHITMAN, WARD & LIE COMPANY

WHITMAN, WARD & LEE COMPANY THE COMPLETE QUALITY FISH HOUSE 3-15 FISH PIER BOSTON, MASS. Boston, Vess. Lee. 1C, 1529. Sutmerine Signal Corpn. Boston, Vess. Centleren: 1 wish to state that Pathoneter installed on Steamer Frinceton has been working perfectly and not piving any trouble whiteover since installed. What compratulate the tangement and your Nr. Netart for benefit of Fathoreter. Yours truly, Par Collins Manda Collins Paragraph

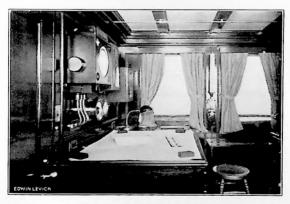
Capt. Collins is at present Master of the Trawler CORNELL, which is one of the three new trawlers recently equipped with Fathometers by the Whitman Ward & Lee Company for the General Sca Foods Corporation of Gloucester, Mass.



PATHOMETER EQUIPPED VACHT

The majority of the representative American yachts, of which there are about thirty equipped with the Fathometer, indicates the full appreciation by the owners of the value of visual echo sounding for this type of vessel.

When the Master at his chart table looks up at the Fathometer and sees many soundings a minute flashing upon the dial, he has at hand instant accurate information of the depth of water beneath the keel of his ship. Knowledge of his position obtained through frequent Fathometer soundings gives him complete assurance that he is on his charted course and adds greatly to the pleasure and safety of yachting.



FATHOMETER INSTALLED IN THE CHART ROOM OF THE "HI-ESMARO"



S.S. CYRUS FIELD
CABLE SHIP OF THE WESTERN UNION TELEGRAPH COMPANY

In May, 1925, the first trip following the installation of the Fathometer on the CYRUS FIELD was made from New York to Halifax. The weather was foggy most of the way, making the course somewhat irregular, but it was plotted on the charts by the ship's officers and depths at regular intervals were observed on the Fathometer dial and recorded by them on the chart.

Captain M. H. Bloomer, Commanding the CYRUS FIELD, in commenting upon the accuracy of the Fathometer and his ability to determine the contour of the sea bottom, stated as follows:

"The distance covered in dense fog was 630 miles and the time taken was 62 hours. This was due entirely to the added confidence that the Fathometer gave me and never before have I proceeded in fog with such little anxiety."

The following comments received under date of May 28, 1930, from Mr. G. H. Ridge, General Plant Manager (Ocean Cables) of this Company, presents information of value in connection with the Fathometer equipment on the Cable Repair Ship CYRUS FIELD.

"This is in reply to your inquiry regarding the Fathometer installed on our Cable Repair Ship CYRUS FIELD in 1925.

"Confidence of the ship's officers in the reliability of the equipment has increased with experience in its use.

"Some repairs and renewals of parts have been necessary from time to time but considering the fact that it was the first commercial installation these were to be expected.

"It has proven to be of great value to us not only on the cable grounds, but as a general aid to navigation."

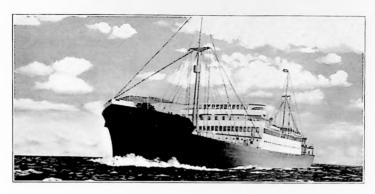
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M.S. CHARLES G. BLACK
TANKER OF THE STANDARD SHIPPING COMPANY

The tankers CHARLES G. BLACK, J. A. MOFFETT, JR., and O. T. WARING of the Standard Shipping Company have been equipped with Fathometers.

Fathometer equipment has been ordered by the Standard Shipping Company for their two new tankers which are now being built at the ship-yard of the Federal Shipbuilding Company. Additional Fathometer equipments have been specified for the six new tankers of this company which are being built abroad.



CITY OF NEW YORK
AMERICAN SOUTH AFRICAN LINE, INC.
Recently Equipped with the Fathometer



SANTA CLARA
GRACE LINE, INC.
Recently Equipped with the Fathomater

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